

REMARKS

Entry of the foregoing, reexamination and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.112, and in light of the remarks which follow, are respectfully requested.

Claim 25 has been canceled without prejudice or disclaimer and replaced by new claims 28 and 29. Support for the new claims may be found on page 14, second through fifth paragraphs thereof. Claims 2-24 and 26-29 are now pending in this application.

Claim 25 was rejected under 35 U.S.C. §112, second paragraph, for the reasons set forth in the first paragraph on page 3 of the Office Action. Claim 25 was also rejected under 35 U.S.C. §101 for the reason set forth in the second paragraph on page 3 of the Office Action.

Both of these rejections have been obviated by the cancellation of claim 25. Replacement claims 28 and 29 recite positive, active process steps and are submitted to be free of the aforementioned rejections directed to claim 25.

Claims 27, 2-6, 13-16 and 18-23 stand rejected under 35 U.S.C. §103(a) as unpatentable over WO 94/14746 to Hoefnagel et al for the reasons set forth in the second and third paragraphs on page 2 of the Office Action. Reconsideration and withdrawal of this rejection is respectfully requested for the following reasons.

The present invention is directed to a process for preparing *p*-hydroxy mandelic compounds by reacting a hydroxylated, aromatic compound with glyoxylic acid in aqueous media and in the presence of an alkaline agent whereby a catalytically effective amount of a polycarboxylic compound is employed. The presence of the catalyst unexpectedly led to

increased yields of the desired products. The cited reference does not disclose or suggest the process of the present invention.

The Office Action refers to Example 3 of WO '746 which discloses the presence of zinc oxalate. According to this reference, it is the zinc ion which acts as a catalyst (page 7, lines 23-25); the presence of oxalate ion actually inhibits the formation of oxalic acid via a Cannizzaro reaction (page 9, lines 1-6). WO '746 actually refers to oxalate as an inert ligand (page 9, lines 5-6). Accordingly, WO '746 does not teach those of ordinary skill that oxalic acid acts as a catalyst in reacting hydroxylated aromatic compounds with glyoxylic acid. To the contrary, the reference teaches that the oxalate is inert.

Applicants respectfully submit that there would have been no motivation or incentive to one of ordinary skill in the art, based on the teachings of WO '746, to add a polycarboxylic compound in catalytic amounts to the reaction mixture described in the reference. The comment by the Examiner regarding claim 21 is noted. Attention is directed to the discussion on page 12, last paragraph, of the specification. Commercially available glyoxylic acid solutions may contain oxalic acid as an impurity. The amount of oxalic acid in the solutions is insufficient to catalyze the reaction between hydroxylated aromatic compound and glyoxylic acid in accordance with the process described in the claims. Additional oxalic acid must be added to ensure that a catalytic amount is present.

In view of the above remarks, the §103(a) rejection over WO '746 should be withdrawn and such action is respectfully requested.

Claims 27, 2-16, 13 and 15-24 have been rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent 4,339,602 to Schouteeten et al for reasons set forth in the

fourth paragraph on page 2 of the Office Action. Reconsideration and withdrawal of this rejection is requested for the following reasons.

The rejection seems to be based on the proposition that oxalic acid is somehow present as a catalyst in the reaction disclosed in Schouteeten '602 even though the reference, as the Examiner acknowledges, does not indicate that a polycarboxylic compound is present during the reaction. The Examiner refers to column 1, lines 21-23 of this reference which discloses that glyoxylic acid "dismutes" into oxalic and glycolic acids in an alkaline aqueous medium "when hot." The reference does not indicate that glyoxylic acid "dismutes" under the reaction conditions disclosed therein so it is unclear whether any oxalic acid is present. The reference also does not disclose the presence of oxalic acid in the glyoxylic acid solution used in the Examples. Accordingly, applicants fail to see why the present claims are *prima facie* obvious over Schouteeten '602.

Regarding present claim 21, applicants refer again to page 12, last paragraph, of the disclosure. While some commercially available solutions of glyoxylic acid may contain oxalic acid as an impurity, the oxalic acid is not present in catalytic amounts as set forth in the present claims. The cited reference does not disclose the presence of oxalic acid nor recognize that oxalic acid can be used as a catalyst in the reaction of hydroxy aromatic compounds with glyoxylic acid. Thus, there would be no motivation for those of ordinary skill to modify the process disclosed in Schouteeten '602 to arrive at the presently claimed invention.

Further, applicants point out that claims 7-12 are drawn to the use of compounds of the formula COOH-R₁-COOH as catalysts where R₁ is not a valency bond. Clearly, there

is no disclosure or suggestion in Schouteeten '602 regarding the use of the carboxylic compounds of claims 7-12 as catalysts.

For the above reasons, the §103(a) rejection over Schouteeten '602 should be withdrawn and such action is respectfully requested.

Claim 25 stands rejected under 35 U.S.C. §103(a) as unpatentable over WO '746 "as applied to claims 25 and 26 as above" and further in view of U.S. Patent 4,165,341 to Umemura et al for reasons set forth in the last paragraph on page 3 and the first paragraph on page 4 of the Office Action. From the nature of the Examiner's remarks, applicants believe the rejection was intended to be applied to claim 26 as in the last Office Action. Accordingly, applicants' traversal of the rejection is based on this assumption.

WO '746 is deficient as a reference for the reasons set forth above. The secondary reference does not supply the deficiencies of WO '746. Umemura '341 does not disclose or suggest reacting hydroxy aromatic compounds with glyoxylic acid under the conditions set forth in the present claims. Accordingly, the combined disclosures of WO '746 and Umemura '341 fail to render obvious the process of claim 26. In view thereof, the §103(a) rejection over these references should be withdrawn.

Claims 7-12 have been rejected under 35 U.S.C. §103(a) as unpatentable over WO '736 "when considered with" Chem. Abstracts 117:191094 for the reason set forth on page 4 of the Office Action. Reconsideration and withdrawal of this rejection is requested for the following reasons.

WO '736 fails to disclose the instantly claimed process for reasons fully discussed above. The Chem. Abstracts citation is directed solely to the acid-catalyzed reaction of

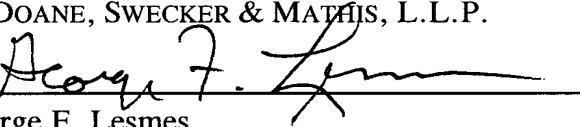
aniline with furandione; it does not relate to the reaction of hydroxy aromatic compounds with glyoxylic acid. There is simply no teaching or disclosure in the Chem. Abstracts article which would motivate those of ordinary skill to add the polycarboxylic compounds of claims 7-12 to the reaction medium of WO '736. Accordingly, the §103(a) rejection based on WO '736 in combination with Chem. Abst. '094 should be withdrawn and such action is respectfully requested.

In view of the above amendments and remarks, it is respectfully submitted that this application is now in allowable condition. An early and favorable indication to that effect is earnestly solicited.

Respectfully submitted,

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